Homoptera of Southeast Asia collected by the Osaka City University Biological Expedition to Southeast Asia 1957-58

Tamotsu ISHIHARA*

Not a few specimens of the Homoptera collected in the Southeast Asia by the biological expedition of the Osaka City University were given to my study. They were 364 specimens of 79 species belonging to 22 families and contained 3 new genera and 11 new species. Most of the specimens together with the type-specimens are preserved in the Entomological Laboratory, College of Agriculture, Ehime University, Matsuyama except for a set of specimens which are to be returned to the Osaka City University.

I express my great appreciation and sincere thanks to the party concerning the biological expedition of the Osaka City University including the collectors of the related valuable specimens.

FAMILY 1, CICADIDAE

Genus Dundubia Amyot et Serville, 1843

Amyor et Serville 1843 Hém. 470.

1. Dundubia bifasciata Liu, 1940 [Pl. 1:1]

Liu 1940 Bull. Mus. Comp. Zoöl. 87 (2): 88, pl. 5: 24.

Locality collected: Mae Klang, Thailand (1 \diamondsuit , March 2, 1958, H. Ikoma leg.). It is probable that the present species is a form of *D. mannifera* (Linné, 1754).

Genus Cosmopsaltria Stål, 1866

Stål 1866 Hem. Afr. 4: 5.

2. Cosmopsaltria oopaga Distant, 1881 [Pl. 2:9]

DISTANT 1881 Trans. Ent. Soc. London, 1881: 640.

Locality collected: Chieng Mai, Thailand (13, Aug. 19, 1958, H. Ikoma leg.). Genus *Platylomia* Stål, 1870

STÅL 1870 Öfv. Vet. Akad. Förh. 27: 708.

3. Platylomia umbrata (Distant, 1888) [Pl. 2:8]

DISTANT 1888 Ann. Mag. Nat. Hist. (6) 1: 293 (Cosmopsaltria).

Locality collected: Chieng Mai, Thailand (13, Aug. 1, 1958, H. Ikoma leg.;

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13, Aug. 30, 1958, H. Ikoma leg.).

In the above specimens, the first and the second cross veins of tegmina are infuscated in one specimen [Pl. 2:8], but all the cross veins and the apices of apical veins of tegmina are distinctly infuscated in the other.

Genus Terpnosia Distant, 1892

DISTANT 1892 Ann. Mag. Nat. Hist. (6) 9: 325.

4. Terpnosia andersoni (Distant, 1883) [Pl. 1:2]

DISTANT 1883 Ann. Mag. Nat. Hist. (5) 9: 170 (Cosmopsaltria)

Locality collected: Nam Tha, Laos (13, March 13, 1958, T. Umesao leg.).

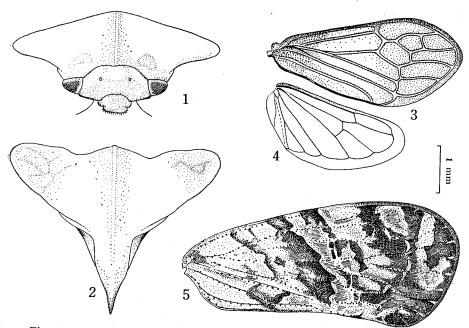
Family 2, MEMBRACIDAE

Genus Tricentrus Stål, 1866

Stål 1866 Hem. Hom. Afr. 4: 89.

5. Tricentrus umesaoi sp. nov. [Figs. 1-4; Pl. 1:3]

Q. Length of body 4.8, width of pronotum 4.3 mm. Mostly brownish species, with the pronotum contrastingly yellow and well developed laterally. Head brownish, in the superior half tinged with yellow. Eyes blackish. Ocelli yellowish. Pronotum yellow, with brown tinge along the anterior margin and on



Figs. 1-5. 1. Tricentrus umesaoi sp. nov. \circ . The head and thorax (frontal view). 2. do. The pronotum and mesonotum. 3. do. The tegmen. 4. do. The wing. 5. Andes ikomai sp. nov. \circ . The tegmen.

of tegmina are the apices of

Umesao leg.).

brownish speterally. Head h. Ocelli yelnargin and on



the apex of the posterior prolongation and with a brownish spot a little postero-inferior to the eye, punctate finely except on carinae which are placed along the median line and irregularly on the lateral angles. Lateral angles of pronotum wide, well developed a little antero-laterally, with obtuse apices. Pronotum prolonged posteriorly and tapering to a point, the base of the prolongation not so wide as to cover entire mesonotum. Proportional ratio of the width to length of pronotum 89/72. Abdominal segments pale brown, scattered with brown punctures except genital segments which are brown, levigate and furnished with whitish pubescence. Body beneath and legs mostly brown. Tegmina pale brown, with concolorous veins and each with five apical cells. Wings hyaline, with faint brownish veins and three apical cells each.

Locality collected: Bangkok, Thailand (1 \bigcirc -holotype, Nov. 24, 1957, T. Umesao leg.).

This new species may be easily differentiated from the known species of the genus by the remarkable coloration and the characteristic features of the pronotum. The trivial name is dedicated to the collector.

FAMILY 3, FULGORIDAE

Genus Pyrops Spinola, 1839

Spinola 1839 Ann. Soc. Ent. France, 8: 231.

6. **Pyrops affinis** (Westwood, 1841) [Pl. 1:6]

Westwood 1841 Trans. Linn. Soc. London, 18: 144, t. 12: 6 (Fulgora).

Locality collected: Sara Buri Botanical Garden, Thailand (12, Dec. 22, 1957, K. Yoda leg.).

FAMILY 4, FLATIDAE

Genus Lawana Distant, 1906

DISTANT 1906 Faun. Brit. Ind. Rhynch. 3: 420.

7. Lawana conspersa (Walker, 1851) [Pl. 1:5]

Walker 1851 List. Hem. 2: 440 (Colobesthes).

Locality collected: Doi Inthanon, Thailand (1 \upphi , Jan. 5, 1958, K. Yoshikawa leg.).

FAMILY 5, CIXIIDAE

Genus Andes Stål, 1866

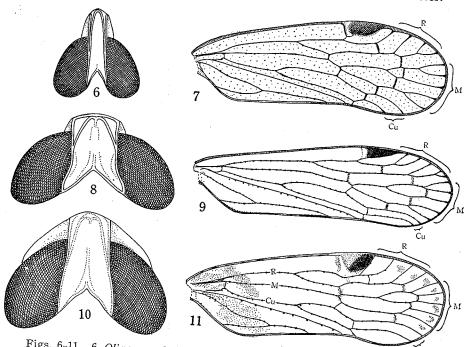
Stål 1866 Hem. Hom. Afr. 4: 166.

8. Andes ikomai sp. nov. [Fig. 5; Pl. 3: 17]

9. Length of body 4.5, id. till tegminal apices 7, tegmen 6 mm. Head mostly brown, with lateral carinae which are on vertex brown except a small pale brownish spot on each side above the eye and on frons pale brownish and

furnished with about seven brown transverse stripes. Antennae pale brownish. Thorax above mostly brown, lateral surface of pronotum pale brownish, scattered with brown dots. Tegmina semitransparent, with yellowish pterostigmata and brownish markings which are exceedingly complex as shown in Figure 5. Legs pale brownish, except for basal four-fifths of fore femora and apices of spines which are brown.

Locality collected: Chieng Mai, Thailand (12, Feb. 3, 1958, H. Ikoma leg.). Although this new species somewhat resembles in several respects Andes noctua Fennah, 1956, described from W. Hupeh, China, the former has the remarkable tegminal markings entirely different from those of the latter.



Figs. 6-11. 6. Oliarus yoshikawai sp. nov. \circ . The head. 7. do. The tegmen. 8. Oliarus asiaticus sp. nov. \circ . The head. 9. do. The tegmen. 10. Oliarus meridionalis sp. nov. \circ . The head. 11. do. The tegmen.

Genus Oliarus Stål, 1862

Stål 1862 Berl. Ent. Zeitschr. 6: 306.

9. Oliarus yoshikawai sp. nov. [Figs. 6-7]

♀. Length of body excluding tegmina 4, tegmen 4.6 mm. Mostly castaneous fuscous. Carinae on basal portion of vertex grayish. Pronotum sordid stramineous. Scutellum fuscous brown in the area interior to the lateral carinae. Tegmina and wings hyaline, veins fuscous brown, scattered with concolorous

e brownish.

granules, pterostigmata also fuscous brown. Legs stramineous except a little darkened femora and black apices of spines.

Vertex parrow three times as long as in middle line as width agrees base.

Vertex narrow, three times as long as in middle line as width across base, latero-apical areolets slender, extending caudad to more than half from apex, lateral margins foliate, disc deeply hollowed out. Frons and clypeus lozenge-shaped, about two and a half times as long as the width, disc of them shallowly hollowed out and transversely striate on each side of middle, median ocellus not visible. Rostrum protruding hind coxae, with apical segment a little longer than subapical (5:4). Scutellum with medio-lateral carinae evanescent anteriorly. Hind tibiae laterally bispinose, apically with five short spines and one longer spine, basal segment of hind tarsi seven-toothed, the second five-toothed. Tegmina comparatively short, less than three times the largest width, with R-fork a little distad of Cu-fork.

Locality collected: Doi Inthanon, Thailand (1 \circ —holotype, Jan. 8, 1958, K. Yoshikawa leg.).

This new species differs from other congeneric species in the shape of the head and of the tegmina. The trivial name is dedicated to the collector.

10. Oliarus asiaticus sp. nov. [Figs. 8-9]

Q. Length of body 6, id. till tegminal apices 7.8, tegmen 5.8 mm. Head black, with carinae mostly light brownish. Frons, clypeus and rostrum light brown, with a whitish patch on each side of the base of clypeus and a black tinge at apex of rostrum. Pronotum and tegulae light brown. Scutellum fusco-testaceous, with brownish carinae. Tegmina transparent, somewhat infuscated at apices of apical veins and on cross veins, pterostigmata brownish black, veins mostly pale brownish, comparatively densely scattered with a-hair-bearing brown punctures, with commissural margin conspicuously black from apex of the claval vein to about two-thirds from the tegminal inner angle. Legs mostly light brownish, with fuscous tinge on the outer surfaces of femora and black apices of spines.

Vertex along the median line slightly shorter than the basal width (26:29), medio-lateral carinae distinct. Frons and clypeus lozenge-shaped, of the ratio of length to width 16:9, shallowly hollowed on each side of median carinae. Median ocellus clearly visible. Rostrum long, sufficiently protruding hind coxae, with the apical segment shorter than the subapical (21:17). Hind tibiae feebly trispinose, apically with five short spines and one long spine, hind tarsi with seven teeth each at apices of the basal segment and of the second segment. Tegmina fairly slender, about three and a half times as long as the largest width, with R-fork much distad of Cu-fork.

Locality collected: Chieng Mai, Thailand (299-holotype) and a paratopotype, May 10, 1958, H. Ikoma leg.).

Although this new species is similar to Oliarus simplex Distant, 1911, the

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- 11. Oliarus meridionalis sp. nov. [Figs. 10-11]
- \$\text{\text{\$\}\$\text{\$\text{\$\tex{\$\text{\$\text{\$\text{\$\text{\$\text{\$\}\$}}}\$}}}}}}}}}}} ensengent

Vertex clearly longer than the basal width (35:26), parallel-sided in the apical half. Frons and clypeus lozenge-shaped of the ratio of length to width 7:4, frons shallowly hollowed on each side of median carina. Rostrum passing beyond hind coxae, with apical segment shorter than the subapical (29:36). Median ocellus visible, though obsolescent. Hind tibiae feebly trispinose, apically with five small spines and one long spine. Hind tarsi each with seven teeth at apex of basal segment and five teeth at apex of the second segment. Tegmina about three times as long as the largest width, with R-fork level with Cu-fork.

Locality collected: Chieng Mai, Thailand (1 \bigcirc -holotype, Apr. 21, 1958, H. Ikoma leg.).

This new species may be separable from other congeneric species by the contrastingly coloured from and clypeus or remarkable tegminal characters.

FAMILY 6, LOPHOPIDAE

Genus Elasmoscelis Spinola, 1839

Spinola 1839 Ann. Soc. Ent. France, 8: 388.

12. Elasmoscelis platypoda Kirby, 1891 [Pl. 1:4]

Kirby 1891 Journ. Linn. Soc. Zool. 24: 148, t. 6: 3.

Locality collected: Kasetsar, Thailand (1314, Dec. 20, 1957, K. Yoda leg.). Genus *Pitambara* Distant, 1906

DISTANT 1906 Faun. Brit. Ind. Rhynch. 3: 319.

DISTANT 1900 Paun, Dru. Ina. Knynch. 5: 519.

13. Pitambara interrupta Distant, 1906 [Pl. 1:7]

DISTANT 1906 loc. cit. 3: 320.

Localities collected: Doi Inthanon, Thailand (1年, Jan. 6, 1958, T. Umesao leg.); Chieng Mai, Thailand (1含, Apr. 11, 1958, H. Ikoma leg.).

FAMILY 7, DERBIDAE

Genus Phenice Westwood, 1845

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.3 mm. Vertex, lypeus contrastth black except ns, with fuscous on each apical scattered with intermittently along the hind

d-sided in the ength to width ostrum passing papical (29:36). Dinose, apically h seven teeth ent. Tegmina with Cu-fork. r. 21, 1958, H.

pecies by the characters.

K. Yoda leg.).

T. Umesao

Westwood 1845 Trans. Linn. Soc. London, 19: 10.

14. Phenice moesta (Westwood, 1851) [Pl. 3: 18]

Westwood 1851 Ann. Mag. Nat. Hist. (2) 7: 209 (Derbe).

Locality collected: Chieng Mai, Thailand (1含2우우, Feb. 4, 1958, H. Ikoma

It is recorded that considerable numbers of this species are found on the underside of the leaves of a kind of palm-tree in Assam and frequent the leaves of a sycamore in Ceylon [Distant 1906 Faun. Brit. Ind. Rhynch. 3: 297].

Family 8, DYCTYOPHARIDAE

Genus Dyctyophara German, 1833

GERMAR 1833 Silberm. Rev. Ent. 1: 175.

15. Dyctyophara sinica Walker, 1851

Walker 1851 List. Hom. Brit. Mus. 2: 321.

Locality collected: Chieng Mai, Thailand (19, May 20, 1958; 19, June 4, 1958; 19, June 13, 1958; 19, June 15, 1958. All H. Ikoma leg.).

Although any specimen related above is similar to a Japanese species in the general appearance, the former, when compared with the latter, has the comparatively short body and the cephalic process which is somewhat short and narrow. I identified them after a little hesitation with the present species, which should be therefore revised in the future when the male specimen is obtained.

FAMILY 9, MEENOPLIDAE

Genus Nisia Melichar, 1903

Melichar 1903 Hom. Faun. Ceylon, 53.

16. Nisia atrovenosa (Lethierry, 1888)

Lethierry 1888 Ann. Mus. Genova, 26: 466 (Meenoplus).

Localities collected: Chieng Mai, Thailand (1&1\varphi, Dec. 30, 1957, T. Umesao leg.; 1\varphi, Feb. 4, 1958, H. Ikoma leg.; 1\varphi, Feb. 6, 1958, H. Ikoma leg.; 1\varphi, Feb. 6, 1958, H. Ikoma leg.; 1\varphi, sao leg.); Bangkok, Thailand (1\varphi, Nov. 29, 1957, T. Umesao leg.).

Genus Eponisia Matsumura, 1914

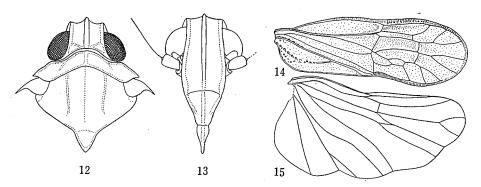
Matsumura 1914 Ann. Mus. Nat. Hung. 12: 285.

17. Eponisia guttula Matsumura, 1914

Matsumura 1914 loc. cit. 286.

Locality collected: Chieng Mai, Thailand (12, Apr. 23, 1958, H. Ikoma leg.; 12, June 4, 1958, H. Ikoma leg.).

Although claval veins are uniting near apex of clavus in both genera, Nisia and Eponisia, and both genera are of similar appearance, the clypeus



Figs. 12-15. 12. *Phaconeura flecheri* KIRKALDY, φ . The head and thorax (dorsal view). 13. do. The head (frontal v.). 14. do. The tegmen. 15. do. The Wing.

is destitute of lateral carinae in the genus *Nisia*, while it is laterally carinate in the genus *Eponisia*. Being relied upon the character, the two genera, and consequently the two species as well, are easily separable from each other.

Genus Phaconeura Kirkaldy, 1906

Kirkaldy 1906 Bull. Hawaii Sugar Plant. Ass. 1: 427.

18. Phaconeura flecheri Kirkaldy, 1908 [Figs. 12-15]

Kirkaldy 1908 Ann. Soc. Ent. Berg. 52: 13.

Locality collected: Chieng Mai, Thailand (19, Jan. 1, 1958, H. Ikoma leg.).

FAMILY 10, DELPHACIDAE

Genus Delphacodes FIEBER, 1866

FIEBER 1866 Verh. zool.-bot. Ges. Wien, 16: 524.

19. Delphacodes psylloides (Lethierry, 1896)

LETHIERRY 1896 Ind. Mus. Notes, 3: 105.

Locality collected: Chieng Mai, Thailand (13, Jan. 27, 1958, H. Ikoma leg.).

- This species is known to be injurious to the corn.
- Genus Nilaparvata Distant, 1906
- DISTANT 1906 Faun. Brit. Ind. Rhynch. 3: 473.

Until the excellent work on the genus was published by H. Hasegawa in 1955, we were unable to determine the specific name of the female specimens of this genus, which also became to be determined by examining the genital segments [H. HASEGAWA 1955 Bull. Nat. Inst. Agr. Sci., Ser. C 5: 117-138, 33 fs.].

20. Nilaparvata lugens (Stål, 1854)

Stål 1854 Öfv. Vet. Akad. Förh. 11: 246 (Delphax).

Localities collected: Chieng Mai, Thailand ($1 \updownarrow 1 \updownarrow$, Dec. 30, 1957, lacking in the note of the collector; $1 \updownarrow$, Jan. 21, 1958, H. Ikoma leg.; $2 \updownarrow \updownarrow$, Jan, 29, 1958, H. Ikoma leg.; $1 \updownarrow$, Feb. 4, 1958, H. Ikoma leg.; $1 \updownarrow$, Feb. 6, 1958, H.



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Ikoma leg.).

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57, lacking ♀, Jan, 29, 6, 1958, H. Ikoma leg.; 1우, Apr. 2, 1958, H. Ikoma leg.); Bangkok, Thailand (4含含10우우, Nov. 29, 1957, T. Umesao leg.; 4含含4우우, Dec. 12, 1957, T. Umesao leg.; 4우우, Dec. 18, 1957, T. Umesao et K. Yoda leg.).

This is a well known species severely injurious to the rice plant.

21. Nilaparvata bakeri Muir, 1917

Muir 1917 Proc. Haw. Ent. Soc. 3: 336, pl. 6: 47.

Locality collected: Chieng Mai, Thailand (13, Dec. 20, 1957, K. Yoda leg.;

13, Jan. 11, 1958, H. Ikoma leg.; 12, Apr. 4, 1958, H. Ikoma leg.).

Genus Sogatella Fennah, 1956

Fennah 1956 Proc. Calif. Acad. Sci., 28 (13): 471.

22. Sogatella furcifera (Horvath, 1899)

Horvath 1899 Term. Fuzet. 22: 372 (Delphax).

Locality collected: Chieng Mai, Thailand (12, Jan. 28, 1958; 12, May 10, 1958. Both H. Ikoma leg.).

This is also a very injurious species to the rice plant.

Genus Numata Matsumura, 1935

Matsumura 1935 Ins. Mats. 9: 139.

23. Numata sacchari (Matsumura, 1910)

Matsumura 1910 Schäd. u. nutz. Ins. Zuckerrohr Formosas, 16 et 28, pl. 16: 3-4 (Stenocranus).

This species is known as a pest of the sugarcane in Ryukyus and Formosa. Genus *Perkinsiella* Kirkaldy, 1903

Kirkaldy 1903 Entomologist, 36: 179.

24. Perkinsiella bicoloris Muir, 1910

Muir 1910 Hawaii Sugar Plant Ass. Bull. 9: 7.

Locality collected: Chieng Mai, Thailand (12, May 16, 1958, H. Ikoma leg.). Genus *Phyllodinus* V_{AN} D_{UZEE}, 1897

VAN DUZEE 1897 Bull. Buffalo Soc. Nat. Sci., 5: 240.

25. Phyllodinus nigropunctatus (Motschulsky, 1863)?

Motschulsky 1863 Bull. Soc. Nat. Mosc. 36: 112 (Mestus?).

Locality collected: Chieng Mai, Thailand (19, May 10, 1958, H. Ikoma leg.; 19, May 30, 1958, H. Ikoma leg.).

The above specimens are macropterous females. In the present genus, without examining the male genitalia of the male specimen, I cannot give the decisive specific name to them now.

FAMILY 11, CERCOPIDAE

Genus Callitettix Stål, 1865

Stål 1865 Öfv. Vet. Akad. Förh. 22: 152.

26. Calitettix versicolor (Fabricius, 1794) [Pl. 2: 14]

Fabricius 1794 Ent. Syst. 4: 50 (Cicada).

Locality collected: Chieng Mai, Thailand (1含, June 17, 1958; 1含1♀, June 23, 1958; 2含含1♀, June 27, 1958. All H. Ikoma leg.).

Genus Aphrophora German, 1831

GERMAR 1831 Mag. Ent. 4: 48.

27. Aphrophora trifasciata Distant, 1916 [Pl. 2: 13]

DISTANT 1916 Faun. Brit. Ind. Rhynch. 6: 190, f. 144.

Locality collected: Doi Suthep, Thailand (1 \updownarrow , Dec. 29, 1957, K. Yoda leg.). Genus *Poophilus* Stål, 1866

Stål 1866 Hem. Hom. Afr. 4: 72.

28. Poophilus costalis (Walker, 1851)

WALKER 1851 List. Hem. 3: 707 (Ptyelus).

Locality collected: Chieng Mai, Thailand (13, Dec. 11, 1957; 13, Jan. 6, 1958; 13, Jan, 19, 1958; 13, Feb. 11, 1958. All H. Ikoma leg.).

Genus Ptyelus St. Farg. et Serville, 1825

St. Farg. et Serville 1825 Encycl. Méthod. 10: 608.

29. Ptyelus pallidus Melichar, 1903 [Pl. 3: 16]

MELICHAR 1903 Hom. Faun. Ceylon, 135.

Locality collected: Doi Suthep, Thailand (13, Dec. 29, 1957, K. Yoda leg). Genus *Clovia* Stål, 1866

Stål 1866 Hem. Hom. Afr. 4: 75.

30. Clovia conifer (Walker, 1851) [Pl. 3: 15]

WALKER 1851 List. Hem. 3: 711 (Ptyelus).

Locality collected: Doi Chieng Dao, Thailand (1♀, Jan. 19, 1958, T. Umesao leg.).

Family 12, JASSIDAE (s. str.)

Genus Batrachomorphus Lewis, 1834

Lewis 1834 Trans. Ent. Soc. London, 1: 51.

31. Batrachomorphus chlorophana (Melichar, 1903) (comb. nov.) [Figs. 16-19]

MELICHAR 1903 Hom. Faun. Ceylon, 153 (Pachyopsis).

Locality collected: Chieng Mai, Thailand (13, Feb. 28, 1958, H. Ikoma leg.). In the above male specimen, body is 4.5, id. till tegminal apices 5 and the tegmen is 4.1 mm in length. The tegmen has concolorous rough punctures which are confluent one another at several places rather to be wrinkled. According to these characters coincident with the Melichar's original description, "Deckflugel tief grob punctiert, die Punct stellenweise zu Ruzeln zusammenfliesend", I identified the specimen with the present species.

32. Batrachomorphus SD.

☆1♀, June

Yoda leg.).

13, Jan. 6,

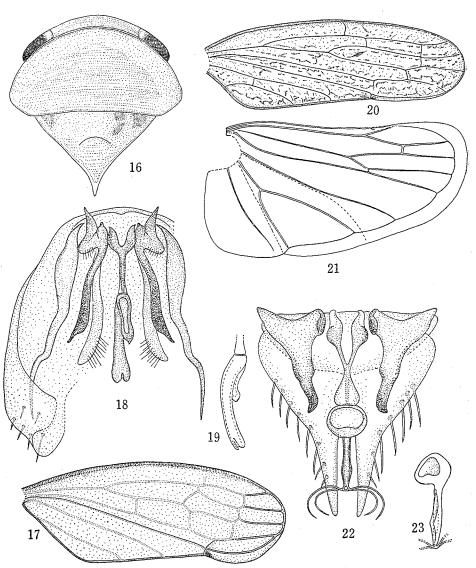
Yoda leg).

58, T. Ume-

nov.) [Figs.

Ikoma leg.). s 5 and the punctures nkled. Acdescription, zusammen-

Locality collected: Chieng Mai, Thailand (19, Jan. 23, 1958, T. Umesao leg.). Although closely similar to the previous species, the tegmen of this female specimen is scattered remarkably with fuscous punctures. The decision of the



Figs. 16-23. 16. Batrachomorphus chlorophana (MELICHAR), §. The head and thorax (dorsal view). 17. do. The tegmen. 18. do. The internal characters of the male genitalia with pygofer and its appendages (dorsal v.). 19. do. The aedeagus (latero-ventral v.). 20. Hecalus orientalis sp. nov. §. The tegmen. 21. do. The wing. 22. do. The internal characters of the male genitalia (dorsal v.). 23. do. The aedeagus (dorso-lateral v.).

specific name shall be retained till the male specimen becomes to be available.

33. Batrachomorphus sp.

Locality collected: Chieng Mai, Thailand (19, May 6, 1958, H. Ikoma leg.). This is also a similar species to the related, but the tegmen is furnished with a-hair-bearing, somewhat fuscous punctures.

FAMILY 13, HECALIDAE

Genus Hecalus Stål, 1864

Stål 1864 Ann. Soc. Ent. France, (4) 4: 65.

34. *Hecalus orientalis* sp. nov. [Figs. 20-23; Pl. 3: 19]

3. Length of body 7, id. till tegminal apices 7.8, tegmen 5.9 mm. Mostly light brown, with brown punctures and some brown patches. Vertex slightly longer than pronotum (21:20), medially carinate in about two-sevenths from base, shallowly hollowed on the disk and raised in the cephalic margin, with two round black spots near the hind margin and one black spot at centre of hind margin and with brown punctures which are confluent towards the cephalic margin, making rather vermiculate patches. Head in the frontal view light brownish, with brown punctures and in frons about six oblique brown lines on each side of median line. Pronotum about as wide as vertex including eyes, with brown punctures which are comparatively bigger and deeper in hue than those on vertex and with several irregular brown patches along the hind margin and near the fore margin and also with several patches between the two series except the central area. Scutellum somewhat tinged with brown medially, with a row of four black spots at about one-fourth from the anterior margin, without punctures except for basal area. Tegmen developed passing beyond the abdominal apex, slightly narrowed towards apex, light brown, with brownish vermiculate patches on both sides of veins which are brownish except pale costal vein, appendix small. Wing subhyaline, milky white, with light brown veins. Legs mostly light brownish except apices of fore and mid tarsi, of hind femora and of hind tibiae, which are tinged with black and apex of each segment of hind tarsi which is darkened. Of genitalia, plates uniseriate, convergent distally to fairly acute apices, connective with subacute apices recurved a little laterad, aedeagus with a globular base, a wing-shaped elevation on each side and four slender tentacle-shaped terminal processes. Gonopore subapical, on the dorsal surface.

Locality collected: Sisophon, Cambodia (233—holotype and one paratopotype, Dec. 8, 1957, T. Umesao leg.).

This new species somewhat resembles in some respects *H. nervosa* (Melichar, 1903) described being based upon one Ceylonese female specimen but the former is entirely different from the latter in number and portion of black

to be available.

, H. Ikoma leg.). en is furnished

.9 mm. Mostly Vertex slightly -sevenths from margin, with ot at centre of ds the cephalic ntal view light brown lines on ncluding eyes, er in hue than ne hind margin the two series own medially, iterior margin, assing beyond with brownish h except pale h light brown l tarsi, of hind x of each segeriate, converes recurved a ation on each

one paratopo-

ore subapical,

nervosa (Meliimen but the ction of black spots on vertex and the coloration of tegmina.

Genus Parabolocratus FIEBER, 1866

FIEBER 1866 Verh. zool.-bot. Ges. Wien, 16: 502, t. 7: 13.

35. Parabolocratus porrectus (Walker, 1858)

WALKER 1858 List. Hom. Suppl. 262 (Acocephalus).

Localities collected: Kamphangpet, Thailand (1 \circ , Dec. 18, 1957, T. Umesao et al. leg.); Kasetsar, Thailand (1 \circ , Dec. 20, 1957, K. Yoda leg.); Chieng Mai, Thailand (1 \circ , Jan. 6, 1958; 1 \circ , Apr. 11, 1958; 1 \circ , June 4, 1958. All H. Ikoma leg.).

36. Parabolocratus albomaculata (Distant, 1908)

DISTANT 1908 Faun. Brit. Ind. Rhynch. 4: 280, f. 179.

Locality collected: Chieng Mai, Thailand (13, Apr. 4, 1958, H. Ikoma leg.).

37. Parabolocratus concentralis Matsumura, 1912

Matsumura 1912 Journ. Coll. Agr. Tohoku Imp. Univ. 4 (7): 287.

Locality collected: Chieng Mai, Thailand (1 \circ , June 4, 1958, H. Ikoma leg.). This species had been known from Ryukyus and Formosa. Recently I could illustrate the genital characters of both sexes. [Ishihara 1959 Kontyu, 27: 77-80, 3 fs.]

38. Parabolocratus prasinus Matsumura, 1905

Matsumura 1905 Thous. Ins. Jap. 2: 48, t. 20: 10.

Locality collected: Chieng Mai, Thailand (19, Feb. 3, 1958, H. Ikoma leg.). In the present species also, I illustrated the genital characters of both sexes with those of the preceding species. [Ishihara 1959 loc. cit.]

Family 14, AGALLIDAE

Genus Agallia Curtis, 1833

Curtis 1833 Ent. Mag. 1: 193.

39. Agallia quadrinotata Melichar, 1903

Melichar 1903 Hom. Faun. Ceylon, 151.

Locality collected: Chieng Mai, Thailand (2♀♀, Jan. 9, 1958; 1♀, Jan. 28, 1958; 1♀, Feb. 6, 1958. All H. Ikoma leg.).

The conspicuous black transverse spot in the antennal pit is not constant. It is lengthened on cheeks nearly to the eye in the two specimens as in the original description but it is divided into two parts, a small black spot below the eye and a black marking in the antennal pit in others.

Family 15, IDIOCERIDAE

Genus Idiocerus Lewis, 1834

Lewis 1834 Trans. Ent. Soc. London, 1: 47.

40. Idiocerus niveosparsus Lethierry, 1889.

Lethierry 1889 Jhurn. Asia. Soc. Bengal, 68: 252.

Localities collected: Bangkok, Thailand (2♀♀, Nov. 29, 1957, T. Umesao leg.); Chieng Mai, Thailand (1♀, Jan. 20, 1958; 1♂, Jan. 26, 1958; 3♂♂, Feb. 6, 1958; 2♂♂1♀, Feb. 7, 1958; 1♂, Feb. 10, 1958; 1♂, Feb. 15, 1958; 1♂, Feb. 21, 1958; 1♀, Feb. 24, 1958; 3♂♂1♀, Feb. 25, 1958; 1♂, Apr. 5, 1958; 2♂♂, Apr. 10, 1958; 2♀♀, Apr. 11, 1958; 1♀, Apr. 12, 1958; 3♂♂1♀, Apr. 15, 1958; 1♂, Apr. 21, 1958; 1♀, Apr. 25, 1958; 1♂, May 20, 1958. All H. Ikoma leg.).

This species is known as a pest of the mango-tree.

41. Idiocerus clypealis Lethierry, 1889 [Pl. 4: 23]

Lethierry 1889 Journ. Asia. Soc. Bengal, 68: 252.

Localities collected: Doi Inthanon, Thailand (1♀, Jan. 7, 1958, T. Umesao leg.); Chieng Mai, Thailand (1♀, Feb. 4, 1958; 1♂, Feb. 8, 1958; 1♂, Apr. 2, 1958; 1♂, Apr. 10, 1958; 1♂2♀♀, Apr. 11, 1958; 1♂, Apr. 18, 1958; 1♂, Apr. 22, 1958; 2♂♂1♀, May 6, 1958. All H. Ikoma leg.).

This species has fairly extensive variation of coloration, especially in the male. Either the two black round spots on the cephalic margin or the two black spots between ocelli or both are vanished and the clypeus is not black in the basal half or entirely not black in some specimens.

42. Idiocerus sp.

Locality collected: Doi Inthanon, Thailand (12, Jan. 7, 1958).

Although this species is similar to the preceding, the body of the former is much larger and somewhat darker than in the latter. I want to retain to decide the specific name till the male specimen is obtained.

Family 16, MACROPSIDAE

Genus Macropsis Lewis, 1834

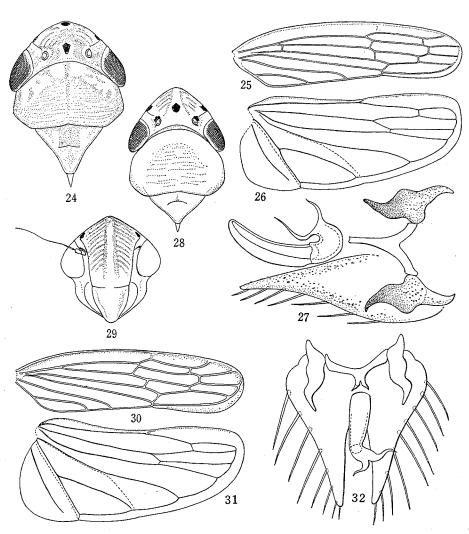
Lewis 1834 Trans. Ent. Soc. London, 1: 49.

43. Macropsis orientalis sp. nov.

9. Length of body 3, id. till tegminal apices 3.7, tegmen 2.8 mm. Body mostly pale reddish stramineous, with tegmen almost hyaline and slightly tinged with brown in apical areas (apical cells and some portions contiguous with them). Vertex about as long in the median line as next the eye, without any marking. Eyes black. Head in the frontal view pale stramineous except about apical one-third which is whitish and ocelli reddish, about as long as the width including eyes (23:22). Pronotum with reddish tinge along the anterior margin and also along the median line, the ratio of length on the median line to vertex 13:3, a little narrower than head (22:22.5). Scutellum with a light reddish fuscous patch near lateral angle on each side. Tegmina coarsely

scattered with fuscous dots in the brown-tinged area and on veins of the hyaline area, infuscated at apices of claval veins, at claval apex, at apices of veins of antero-lateral area and on some cross veins. Abdomen above reddish stramineous, beneath pale stramineous. Legs pale stramineous, but spine-arising bases and claws infuscated.

Locality collected: Chieng Mai, Thailand (1♀-holotype, Apr. 18, 1958, H.



Figs. 24-32. 24. Tettigella spectra (DISTANT), §. The head and thorax (dorsal view). 25. do. The tegmen. 26. do. The wing. 27. do. The connective, aedeagus, styles and the plate (dorso-lateral v.). 28. Kolla mimica DISTANT, §. The head and thorax (dorsal v.). 29. do. The head (frontal v.). 30. do. The tegmen. 31. do. The wing. 32. do. The connective, aedeagus, styles and the plates (dorsal v.).

T. Umesao 3 \$ \$, Feb. 8; 1 \$, Feb. , 1958; 1 \$, or. 12, 1958; \$ \$, May 20,

T. Umesao 1\$, Apr. 2, 8; 1\$, Apr.

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mm. Body and slightly contiguous eye, without eous except long as the the anterior median line with a light

na coarsely

Ikoma leg.).

This new species is somewhat similar to *Pediopsis apicalis* Matsumura, 1912, recorded from S. Kyushu, Formosa and Hongkong, but they will be easily separable each other by the coloration of the head or of the tegmina.

FAMILY 17, TETTIGELLIDAE

Genus Tettigella China et Fennah, 1946

China et Frnnah 1946 Ann. Mag. Nat. Hist. (11) 12: 711.

44. Tettigella spectra (Distant, 1908) [Figs. 24-27]

DISTANT 1908 Faun. Brit. Ind. Rhynch. 4: 211 (Tettigoniella).

Localities collected: Kasetsar, Thailand (1 $\uppsi,$ Dec. 20, 1957, K. Yoda leg.); Doi Suthep (1 $\uppsi,$ Dec. 29, 1957, T. Umesao leg.); Chieng Mai, Thailand (1 $\uppsi,$ Jan. 17, 1958; 1 $\uppsi,$ Jan. 20, 1958; 1 $\uppsi,$ Feb. 13, 1958; 2 $\uppsi,$ Feb. 20, 1958; 1 $\uppsi,$ Apr. 10, 1958; 1 $\uppsi,$ Apr. 10, 1958; 1 $\uppsi,$ Aug 21, 1958; 1 $\uppsi,$ June 4, 1958. All H. Ikoma leg.).

45. Tettigella sulphurata (Distant, 1908) [Pl. 2: 10]

DISTANT Faun. Brit. Ind. Rhynch. 4: 216 (Tettigoniella).

Locality collected: Doi Inthanon, Thailand (13, Jan. 10, 1958, T. Umesao leg.).

Genus Kolla Distant, 1908

DISTANT 1908 Faun. Brit. Ind. Rhynch. 4: 223.

46. Kolla mimica DISTANT, 1908 [Figs. 28-32; Pl. 2: 11]

DISTANT 1908 loc. cit. 225.

Locality collected: Chieng Mai, Thailand (3♀♀, Jan. 31, 1958; 1≎1♀, Feb. 4, 1958; 1仓, Apr. 5, 1958; 1仓, Apr. 23, 1958; 1♀, May 8, 1958; 1♀, May 10, 1958; 1♀, May 20, 1958; 2♀♀, May 21, 1958; 1♂, June 9, 1958. All H. Ikoma leg.).

Although the genus *Kolla* Distant is closely allied in some respects to the genus *Tettigella* China et Fennah, the former is separable from the latter in the structure of the vertex which is subconically narrowed anteriorly with the lateral margins of the eyes.

I examined the internal characters of the male genitalia of the present species, not the genotype as it is. They are different from the genus *Tettigella* in the following points:— connective short-Y-shaped, styles convergingly recurved towards the apices (which are divergingly recurved in *Tettigella*), aedeagus simple, without basal paraphyses, recurved ventrad near the apex which is bifurcate and tapering, gonopore subapical on the ventral surface.

Genus Preta Distant, 1908

DISTANT 1908 Faun. Brit. Ind. Rhynch. 4: 234.

47. Preta gratiosa (Melichar, 1903)

Melichar 1903 Hom. Faun. Ceylon, 160, t. 4: 8 (Sigunoretia).

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X. Yoda leg.); Chailand (1年, 20, 1958; 1含, oma leg.).

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1含1우, Feb. 1우, May 10, All H. Ikoma

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the present nus *Tettigella* ergingly re-1 *Tettigella*), ear the apex 1 surface. Locality collected: Chieng Mai, Thailand (1♀, March 7, 1958, H. Ikoma leg.).

FAMILY 18, XESTOCEPHALIDAE

Genus Xestocephalus Van Duzee, 1892

VAN DUZZE 1892 Trans. Amer. Ent. Soc. 19: 298.

48. Xestocephalus guttatus (Motschulsky, 1859)

Motschulsky 1859 Etud. Ent. 8: 113 (Deltocephalus).

Locality collected: Chieng Mai, Thailand (13, Dec. 30, 1957, collectors not labelled; 12, Jan. 6, 1958; 12, Jan. 21, 1958; 13, Jan. 26, 1958; 12, Feb. 6, 1958; 12, Feb. 16, 1958; 12, Apr. 16, 1958. All H. Ikoma leg.).

I will examine the internal characters of the above specimens and revise the Japanese species in the future.

FAMILY 19, KRISNIDAE nov.

Evans established a new group-name, tribe Krisnini for this genus and placed it, together with some tribes, Penthimini, Gyponini and others, under the subfamily Jassinae [Evans, J. W. 1940 Trans. Ent. Soc. London, 96 (3): 212–214]. The genus Krisna Kirkaldy has, however, a peculiar appearance and special generic characters remarkably different from the usual families of Jassoidea, for example, the wing has the submarginal vein which continues on to jugum [Fig. 36]. The submarginal vein of jugum is found also in the genus Tartessus Stål, 1865, and its allies, which are treated as the family Tartessidae or at the least subfamily Tartessinae [Evans 1940 loc. cit. 207]. Therefore I believe it is proper to create a new family Krisinidae for the genus Krisna Kirkaldy.

Genus Krisna Kirkaldy, 1900

KIRKALDY 1900 Entomologist, 33: 243.

49. Krisna striata (Kirby, 1891) [Figs. 33-40; Pl. 3: 20]

Kirby 1891 Journ. Linn. Soc. Zool. 24: 171 (Gypona).

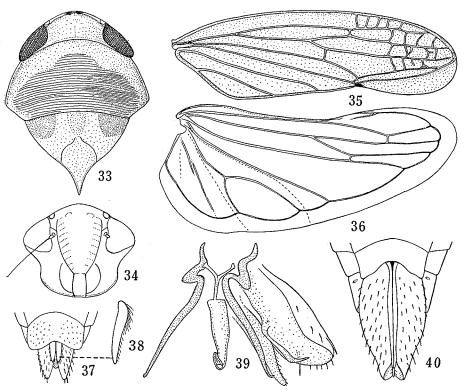
\$\frac{1}{2}\$. Length of body 9.2-10.5, id. till tegminal apices 10.8-11.2 mm. Large, broad depressed species. Mostly pale greenish, with two black spots near apex of crown, a darkly marking at each antero-lateral angle of scutellum. Eyes sanguineous. Head narrower than pronotum, with anterior margin rounded. Face broad and short, margins of genae sinuate below eyes. Lateral frontal sutures occurring near ocelli. Ledges oblique. Crown short, a little longer medially than next the eye, surface weakly rugose, anterior margin strongly carinate. Ocelli large, each placed before the adjacent eye almost contiguous with each other. Pronotum with lateral margins strongly carinate, surface transversely striate. Tegmen obscure, subcoriaceous, with veins irregularly reticulate in apical portion, appendix well developed. Wing with the submarginal

vein continuing on to jugum. Spines at apex of hind femur 1-2-2.

Male genitalia. Plate oblong-ligulate, covered more than half by the seventh sternite. Tenth segment weakly sclerotized dorsally. Pygofer bluntly projecting dorso-caudally on each side, with a conspicuous hook-shaped process rising from ventral margin and recurved caudad so as to lie within the genital capsule on the inner side of the pygofer. Connective Y-shaped, shaft of Y comparatively long. Aedeagus recurved dorsally, laterally depressed; gonopore subapical, opening in a groove. Style very slender S-shaped, well developed caudally, tapering, with the apex nutant.

Female genitalia. Pygofer swollen, coarsely furnished with short stout setae, apparently protruding the ovipostor sheath.

Localities collected: Li, Thailand (1 \circ , Dec. 28, 1957, collector not labelled); Tak, Thailand (1 \circ , Dec. 26, 1957, K. Yoda leg.); Chieng Mai, Thailand (1 \circ , Feb. 7, 1958, H. Ikoma leg.).



Figs. 33-40. Krisna striata (KIRBY). 33. The head and thorax (dorsal v.). 34. The head (frontal v.). 35. The tegmen. 36. The wing. 37. The genital segments of the male (ventral v.). 38. The genital plate. 39. The connective, aedeagus, styles, pygofer and the plate. 40. The genital segments of the female.

FAMILY 20, DELTOCEPHALIDAE

Genus Balclutha Kirkaldy, 1900

Kirkaldy 1900 Entomologist, 33: 243.

50. Balclutha punctata (Thunberg, 1784)

THUNBERG 1784 Act. Ups. 4: 21 (Cicada).

Localities collected: Doi Suthep, Thailand (1 \circ , Dec. 29, 1957, K. Yoda leg.); Chieng Mai, Thailand (1 \circ , Jan. 6, 1958; 1 \circ , Jan. 26, 1958. Both H. Ikoma leg.).

51. Balclutha viridis (Matsumura, 1902)

Matsumura 1902 Term. Füzet. 25: 357 et 359 (Gnathodus).

Locality collected: Chieng Mai, Thailand (12, Jan. 6, 1958, H. Ikoma leg.).

Genus Nesosteles Kirkaldy, 1906

Kirkaldy 1906 Haw. Sugar Plant Ass. Ent. Bull. 1: 343.

52. Nesosteles incisus (Matsumura, 1902)

Matsumura 1902 Term. Füzet. 25: 357 et 360 (Gnathodus).

Locality collected: Chieng Mai, Thailand (1 \circ , Jan. 6, 1958; 2 \circ , Jan. 21, 1958; 1 \circ , Jan. 25, 1958; 1 \circ , Feb. 2, 1958; 1 \circ , Feb. 3, 1958; 1 \circ , Feb. 18, 1958; 1 \circ , Feb. 25, 1958. All H. Ikoma leg.).

Genus Yamatotettix Matsumura, 1914

Matsumura 1914 Journ. Coll. Agr. Sapporo, 5 (7): 183.

53. Yamatotettix flavovittata Matsumura, 1914 [Pl. 3: 21]

Matsumura 1914 loc. cit. 183.

Locality collected: Chieng Mai, Thailand (12, Feb. 16, 1958, H. Ikoma leg.).

Genus Macrosteles Fieber, 1866

FIEBER 1866 Verh. zool.-bot. Ges. Wien, 16: 504.

54. Macrosteles fasciifrons (Stål, 1858)

Stål 1858 Stett. Ent. Zeit. 19: 194 (Thamnotettix).

Locality collected: Chieng Mai, Thailand (1年, Jan. 6, 1958; 1年, Jan. 17, 1958; 1令, Feb. 24, 1958. All H. Ikoma leg.).

Genus Bhatia Distant, 1908

DISTANT 1908 Faun. Brit. Ind. Rhynch. 4: 357.

The genus *Melichareiella* Matsumura, 1914, [Journ. Coll. Agr. Sapporo, 5 (7): 236] has been treated as a synonym of the present genus but they are entirely different in the internal characters of the male genitalia, as I illustrated the genotype of the former, *M. satsumensis* Matsumura, 1914 [loc. cit. 237] [Ishihara 1954 Zool. Mag. 63 (6): 243, f. 1]. In the present genus, the connective and aedeagus fused, the aedeagus is asymmetrical and the styles are not projecting laterally but quite blunt as shown in Figure 48.

55. Bhatia olivacea (Melichar, 1903) [Fig. 48; Pl. 4: 24]

Melichar 1903 Hom. Faun. Ceylon, 191, t. 6:1 (Eutettix?).

Locality collected: Chieng Mai, Thailand (12, Feb. 4, 1958; 13, Feb. 11,

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1958; 13, Feb. 16, 1958; 12, Apr. 11, 1958; 13, Apr. 16, 1958; 12, Apr. 25, 1958; 13, May 6, 1958; 12, June 25, 1958. All H. Ikoma leg.).

Genus Hishimonus Ishihara, 1953

Ishihara 1953 Sci. Rep. Matsuyama Agr. Coll. 11: 38.

56. Hishimonus disciguttus (Walker, 1857) [Fig. 47]

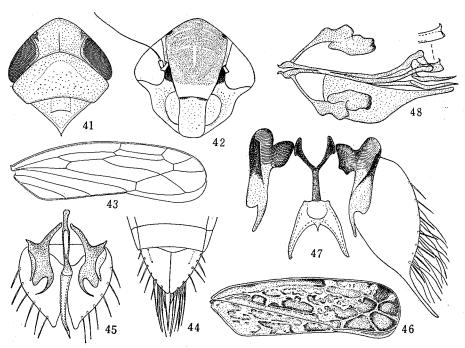
Walker 1857 Journ. Linn. Soc. Zool. 1: 172 (Acocephalus).

Locality collected: Chieng Mai, Thailand (19, Feb. 5, 1958; 26619, Feb. 6, 1958; 19, Feb. 7, 1958; 16, Feb. 10, 1958; 19, Feb. 16, 1958; 16299, Feb. 25, 1958; 19, Apr. 21, 1958. All H. Ikoma leg.).

By examing these specimens, I could find that the Japanese specimen is of a different species and *Thamnotettix sellata* Uhler, 1896 [*Proc. U. S. Mus.* 19: 294] became a valid species. [Ishihara 1959 *Trans. Shikoku Ent. Soc.* 6 (3): 48] Genus *Jassargus Zachvatkin*, 1934

Zachvatkin 1934 Men. Soc. Ent. Ital. 12: 268.

57. Jassargus infirmus (Melichar, 1903) (comb. nov.) [Figs. 53-58]



Figs. 41-48. 41. Deltocephalus intermedius Melichar, 3. The head and thorax (dorsal v.). 42. do. The head (frontal v.). 43. do. The tegmen. 44. do. The genital segments of the male (ventral v.). 45. do. The connective, aedeagus, styles and the plate (dorsal v.). 46. Deltocephalus (s. lat.) sp. (Pl. 4: 25). The tegmen. 47. Hishimonus disciguttus (Walker). The connective, aedeagus, styles and the plate. 48. Bhatia olivacea (Melichar). The connective, aedeagus, styles and the plate (dorsal v.).

Melichar 1903 Hom. Faun. Ceylon, 203, t. 5: 11 (Deltocephalus).

Locality collected: Chieng Mai, Thailand (1 \circ , Dec. 20, 1957, K. Yoda leg.; 1 \circ , Jan 17, 1958, H. Ikoma leg.; 2 \circ , Feb. 4, 1958, H. Ikoma leg.; 1 \circ , Feb. 6, 1958, H. Ikoma leg.; 1 \circ , May 30, 1958, H. Ikoma leg.).

This species has a fairly wide variation in the coloration.

Genus Inazuma Ishihara, 1953

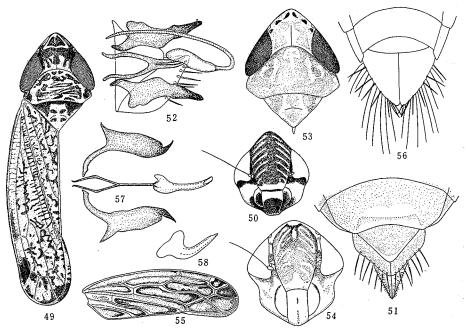
Ishihara 1953 Sci. Rep. Matsuyama Agr. Coll. No. 11: 48.

58. Inazuma dorsalis (Motschulsky, 1859)

Motschulsky 1859 Etud. Ent. 7: 114 (Deltocephalus).

Locality collected: Chieng Mai, Thailand (19, Jan. 6, 1958; 19, Jan. 11, 1958; 19, Jan. 26, 1958; 19, Jan. 28, 1958; 19, Feb. 15, 1958; 19, Apr. 23, 1958; 19, July 21, 1958. All H. Ikoma leg.).

It will be a noteworthy fact that no male specimen of this famous species injurious to the rice-plant was found in the collection. It is probable that the male cannot hibernate in the adult stage there.



Figs. 49-58. 49. Umesaona (gen. nov.) asiatica sp. nov. \diamondsuit . The head, thorax and the tegmen. 50. do. The head (frontal v.). 51. do. The genital segments (vental v.). 52. do. The connective, aedeagus, styles, plate and the valve (dorso-lateral v.). 53. Jassargus infirmus (Melichar), \diamondsuit . The head and thorax (dorsal v.). 54. do. The head (frontal v.). 55. do. The tegmen. 56. do. The genital segments (ventral v.). 57. do. The connective, aedeagus and the styles (dorso-lateral v.). 58. do. The aedeagus (lateral v.).

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Genus Umesaona nov.

Genotype: Umesaona asiatica sp. nov.

Head wider than pronotum, anterior margin rounded. Vertex with median length much greater than length next the eye, apex acutely angled [Fig. 49]. Frons comparatively wide. Clypeus short, apically conspicuously narrowed, with base and apex truncate [Fig. 50]. Tegmen with outer ante-apical cell very small [Fig. 49]. Hind femora each with two thin subapical spines and two stout apical spines. Of male genital segment, plate expanded laterally at the basal one-third, with spine-like setae which are uniseriate and restricted to distal two-thirds of lateral margin, valve very large, covering about basal three-fourths of plates, pygofer long, extended well beyond anal tube and convergent distally to a subacute apex, with four spine-like setae and in addition to them some filamentous setae and without any hook-like or dentate process [Fig. 51]. Tenth segment broadly but shortly sclerotized dorsally. Connective large, scissor-shaped. Aedeagus elongate and swollen in the base, very slender in the rest, recurved dorsad, then cephalad and attaining almost to the base of connective, gonopore terminal. Styles simple, with blunt apices which are developed caudad distinctly passing beyond the apex of connective.

This new genus is near the genus *Adarrus* Ribaut, 1947, or genus *Arocephalus* Ribaut, 1947, but clearly differs from them in the characters of the genital segments.

- 59. *Umesaona asiatica* sp. nov. [Figs. 49-52; Pl. 4: 26]
- 3. Length of body 4.1, id. till tegminal apices 4.6 mm. Body and tegmina mostly light sooty brown, with fuscous patches and markings. Vertex mostly fuscous except an apical triangular marking and base. Head in the frontal view fuscous except about seven oblique lines on each side of median line of frons and apex of frons, about one-third near base of clypeus, marginal area of lora and central area of genae which are light sooty brown. Pronotum with irregular fuscous bands of patches. Scutellum fuscous at base, especially largely on the lateral angles and with four fuscous spots placed a little posterior to the middle. Tegmina with vermiculate fuscous lines irregularly and one conspicuously fuscous marking on the anterior anteapical cell, contiguously with the fourth apical cell and also one fuscous marking from the distal onethird of the second apical cell to apex, without any such fuscous tinge on the costal vein. Wings subhyaline, with a fuscous tinge. Abdomen mostly fuscous, except posterior margin of valve, upper margins of distal half of pygofer and hind margins of abdominal segments. Legs mostly light sooty brownish, with fuscous tinge in the longitudinal keels of tibiae and apices of tarsal segments.

Locality collected: Kompong Cham, Cambodia (13—holotype, Feb. 19, 1958, T. Umesao leg.).

This new species may be easily recognized by the characteristic coloration.

Genus Deltocephalus Burmeister, 1838

Burmeister 1838 Genera Ins. 1: 49.

60. Deltocephalus intermedius Melichr, 1903 [Figs. 41-44]

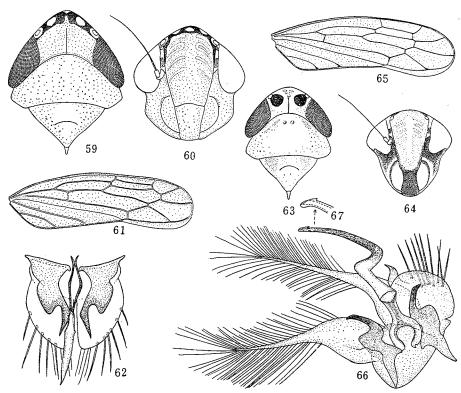
Melichar 1903 Hom. Faun. Ceylon, 205.

Locality collected: Chieng Mai, Thailand (1含, Jan. 17, 1958; 1♀, Jan. 28, 1958; 1♀, Feb. 16, 1958; 1♀, Apr. 11, 1958; 1♀, Apr. 12, 1958; 1♀, Apr. 18, 1958; 1♀, Apr. 23, 1958; 1♂, Apr. 25, 1958; 1♀, May 16, 1958. All H. Ikoma leg.).

61. Deltocephalus distinctus Motschulsky, 1859 [Figs. 59-62]

Motschulsky 1859 Etud. Ent. 8: 112.

Locality collected: Chieng Mai, Thailand (13, Feb. 4, 1958, H. Ikoma leg.). This species is known to have two or three blackish macular shadings which are inconstant. The above specimen is destitute of such markings and



Figs. 59-67. 59. Deltocephalus distinctus Motschulsky, §. The head and thorax (dorsal v.). 60. do. The head (frontal v.). 61. do. The tegmen. 62. do. The connective, aedeagus, styles and the plate (dorsal v.). 63. Phlogothamnus (gen. nov.) maculiceps sp. nov. §. The head and thorax (dorsal v.). 64. do. The head (frontal v.). 65. do. The tegmen. 66. do. The internal characters of the male genitalia (dorsolateral v.). 67. do. The apex of aedeagus (lateral v.).

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62. **Deltocephalus** (s. lat.) ? sp. [Fig. 46; Pl. 4: 25]

Locality collected: Sisophon, Cambodia (1♀, Dec. 8, 1958, T. Umesao leg.). Without examing the male specimen, I could not decide the genus to which the above female specimen belongs.

Genus Phlogothamnus nov.

Genotype: Phlogothamnus maculiceps sp. nov.

Head about as wide as pronotum. Vertex longer medially than next the eye, apex rounded [Fig. 63]. Frons long, about 1.8 times as long as the distance between ocelli. Clypeus narrowed near base, apex truncate. Genae slightly sinuate below eyes [Fig. 64]. Tegmina usual [Fig. 65]. Spines at apex of hind femora each 1-1-2. Male pygofer with several spine-like setae and acute projection on each latero-caudal part. Genital plates terminating in two slender lobes (which are indistinct in dried specimens), without any spine-like setae, only with many long filamentous setae marginally. Connective Y-shaped with basal apices approaching each other. Aedeagus recurved dorsad and developed to a blunt apex, with two small terminal processes above gono-pore which is subterminal on the dorsal surface of aedeagus. Styles with sharply projected posterior parts which attain nearly to apex of connective [Figs. 66-67].

This genus is near *Phlogotettix* Ribaut, 1942, but they are entirely different in the internal characters of the male genitalia, especially in the connective, arms of which are circularly curved in the former, while they are connected almost making a bar in the latter, in the aedeagus which is simple in the former, while it has a large ventral projection in the latter, etc.

- 63. Phlogothamnus maculiceps sp. nov. [Figs. 63-66]
- ☼. Length of body 3.5, id. till tegminal apices 4.5 mm. Body and tegmina mostly stramineous. Vertex with two conspicuous black spots near the cephalic margin. Frons slightly darkened except the stramineous marking on the median line and some bars arising from it. Clypeus, marginal areas of lora and most parts of genae conspicuously fuscous. Pronotum and scutellum mostly stramineous with faint fuscous patches near the anterior margin of pronotum and on both sides of scutellum near the lateral angles. Tegmina uniformly concolorous with body, with veins a little deeper in hue. Wings subhyaline, with brownish veins. Legs including spines stramineous.

Locality collected: Doi Inthanon, Thailand (1♦—holotype, Jan. 5, 1958, K. Yoshikawa et K. Yoda leg.).

This new species resembles *Thamnotettix cicur* Melichar, 1903, described from Ceylon but by the coloration of the head in the frontal view, portion of black spots on vertex or by coloration of tegmina they are discernible from each other.

64. Phlogothamnus? sp.

Locality collected: Sisophon, Cambodia (19, Dec. 8, 1957, T. Umesao leg.). The identification of this genus and its allies must be relied upon the male specimens. I could not determine the specific name of the above female specimen, which is a little larger than the preceding species and destitute of the black spots on the vertex.

Genus Nephotettix Matsumura, 1902

Matsumura 1902 Term. Füzet. 25: 356 et 378.

65. Nephotettix apicalis (Motschulsky, 1859)

Motschulsky 1859 Etud. Ent. 7: 110 (Pediopsis).

Localities collected: Kasetsar, Thailand ($1 \diamondsuit 1 \diamondsuit$, Dec. 20, 1957, K. Yoda leg.); Bangkok, Thailand ($2 \diamondsuit \diamondsuit 1 \diamondsuit$, Dec. 18, 1957, T. Umesao et K. Yoda leg.); Chieng Mai, Thailand ($1 \diamondsuit 2 \diamondsuit \diamondsuit \diamondsuit$, Jan. 6, 1958; $1 \diamondsuit$, Jan. 11, 1958; $3 \diamondsuit \diamondsuit$, Feb. 3, 1958; $1 \diamondsuit$, May 6, 1958; $4 \diamondsuit \diamondsuit \diamondsuit \diamondsuit \diamondsuit \diamondsuit$, May 10, 1958; $1 \diamondsuit$, May 13, 1958; $1 \diamondsuit$, May 21, 1958; $1 \diamondsuit$, May 30, 1958; $1 \diamondsuit$, June 9, 1958; $1 \diamondsuit$, June 15, 1958. All H. Ikoma leg.); Siem Reap, Cambodia ($1 \diamondsuit$, Dec. 6, 1957, T. Umesao leg.); Sisophon, Cambodia ($6 \diamondsuit \diamondsuit \diamondsuit \diamondsuit \diamondsuit \diamondsuit$, Dec. 8, 1957, T. Umesao leg.).

This is a famous pest of the rice-plant.

Genus Mimodrylix ZAKHVATKIN, 1935

Zakhvatkin 1935 Moscou Univ. Sci. Proc. 4: 108.

66. *Mimodrylix capicola* (Stål, 1855) [Pl. 4: 27]

Stål 1855 Öfv. Vet. Akad. Förh. 12: 99 (Thamnotettix).

Locality collected: Chieng Mai, Thailand (19, Jan. 6, 1958; 19, Feb. 6, 1958; 19, Feb. 28, 1958; 13, Apr. 12, 1958; 13, Apr. 18, 1958; 19, May 6, 1958; 299, May 10, 1958; 19, May, 13, 1958; 19, May 16, 1958; 13, June 4, 1958. All H. Ikoma leg.).

Jassus fusconervosus Motschulsky, 1863, and Euscelis fusconervis Kato, 1940, are synonyms of this species, the detailed illustration of which was published already by me [Ishihara 1954 Sci. Rep. Matsuyama Agr. Colle. 14: 6, f. 4].

Genus Handianus RIBAUT, 1942

RIBAUT 1942 Bull. Soc. Hist. Nat. Toulouse, 77: 265.

67. *Handianus* ? sp. [Pl. 2: 12]

Locality collected: Chieng Mai, Thailand (19, June 29, 1958, H. Ikoma leg.). Only one female specimen was examined. The decision of the specific name must be retained till the male specimen is obtained.

Genus Platyretus Melichar, 1903

Melichar 1903 Hom. Faun. Ceylon, 174.

68. Platyretus marginatus Melichar, 1903 [Figs. 68-71; Pl. 3: 22]

Melichar 1903 loc. cit. 174.

Locality collected: Chieng Mai, Thailand (12, Feb. 4, 1958; 12, May 19, 1958. Both H. Ikoma leg.).

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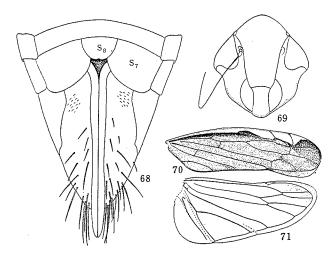
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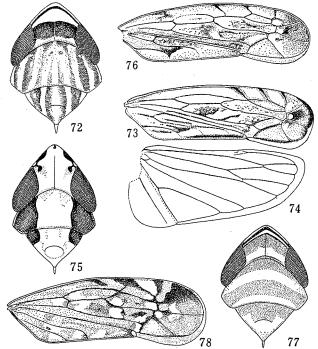
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Figs. 68-71. Platyretus marginatus Melichar, φ . 68. The genital segments (ventral v. S_7 The seventh sternite. S_8 The eighth sternite). 69. The head (frontal v.). 70. The tegmen. 71. The wing.



Figs. 72-78. 72. Scaphoideus morosus Melichar, 9. The head and thorax (dorsal v.). 73. do. The tegmen. 74. do. The wing. 75. Scaphoideus albovittatus Matsumura, 3. The head and thorax (dorsal v.). 76. do. The tegmen. 77. Scaphoideus festivus Matsumura, 3. The head and thorax (dorsal v.). 78. do. The tegmen.

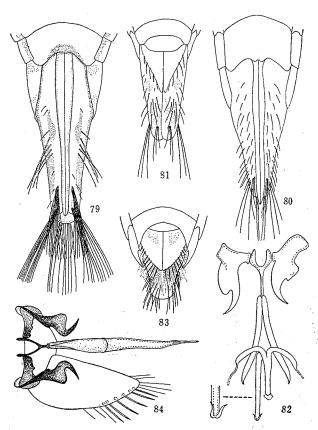
To my regret, no male specimen of this species was found in the collection, however, basing upon the female specimen, I could prepare some drawings of the generic characters [Figs. 68-71]. It will be a noteworthy character that the eighth sternite [Fig. 68: S_8] of the female is recognizable.

Genus Scaphoideus UHLER, 1888 (s. lat.)

UHLER 1888 Trans. Maryland Acad. Sci. 1: 33.

69. **Scaphoideus morosus** Melichar, 1903 [Figs. 72-74 et 79; Pl. 4: 28] Melichar 1903 *Hom. Faun. Ceylon*, 197, t. 5: 14.

Locality collected: Chieng Mai, Thailand (1 \circ , Jan. 28, 1958; 1 \circ , Feb. 4, 1958; 1 \circ , May 18, 1958. All H. Ikoma leg.).



Figs. 79-84. 79. Scaphoideus morosus Melichar, \$\operatorname{Q}\$. The genital segments (vental v.). 80. Scaphoideus albovittatus Matsumura, \$\operatorname{Q}\$. The genital segments (ventral v.). 81. do. \$\operatorname{Q}\$. The genital segments (ventral v.). 82. do. The connective, aedeagus and the styles (dorsal v.). 83. Scaphoideus festivus Matsumura, \$\operatorname{Q}\$. The genital segments (ventral v.). 84. do. The connective, aedeagus, styles, plate and the valve (dorsal v.).

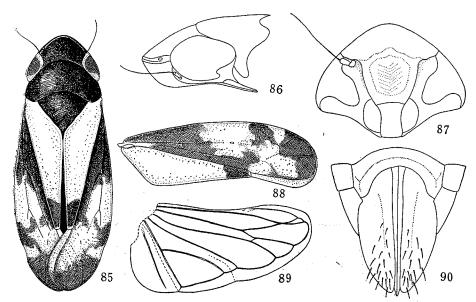
70. **Scaphoideus festivus** Matsumura, 1902 [Figs. 77-78 et 83-84] Mrtsumura 1902 *Term. Füzet.* **25**: 384, f. 14.

Locality collected: Chieng Mai, Thailand (1 &, June 4, 1958, H. Ikoma leg.). 71. Scaphoideus albovittatus Matsumura, 1913 [Figs. 75-76 et 80-82] Matsumura 1913 Thous. Ins. Jap., Addit. 1: 68, pl. 8: 21.

Locality collected: Chieng Mai, Thailand (13, Dec. 30, 1957, collector not labelled; 19, Jan. 28, 1958; 13, Feb. 2, 1958; 299, Feb. 7, 1958; 19, Feb. 15, 1958; 13, Feb. 18, 1958; 299, March 7, 1958; 19, May 6, 1958; 19, May 13, 1958. All specimens excepting one male H. Ikoma leg.).

Except for S. morosus Melichar, I could examine the internal characters of the male genitalia of them and know that S. festivus Matsumura and S. albovittatus Matsumura should not be considered to be congeneric. The aedeagus is simple in S. festivus Matsumura, while it is fundamentally different and complex in S. albovittatus Matsumura:— aedeagus is slender, tapering, with gonopore subterminally on the dorsal surface in the former [Fig. 84], while it has conspicuous paraphyses being dissociated from the paraphyses and connective and the gonopore is terminal below two small terminal processes in the latter [Fig. 82]. Further study on the present genus shall be made in the future, when sufficient specimens become available.

Genus Ikomella nov.



Figs. 85-90. *Ikomella* (gen. nov.) confersa sp. nov. 9. 85. The dorsal view. 86. The head and pronotum (lateral v.). 87. The head (frontal v.). 88. The tegmen. 89. The wing. 90. The genital segments (ventral v.).

Genotype: Ikomella confersa sp. nov. [Figs. 85-90]

Small depressed, polished species [Fig. 85]. Head a little narrower than pronotum. Cephalic margin conspicuously ridged with two contiguous carinae. Frons remarkably tumid, about as long as the distance between antennal pits [Fig. 89]. Clypeus longer than base, somewhat narrowed near base. Genae slightly sinuate below eyes, making a very thin band at narrowest portion near clypeus. Vertex subangularly produced, clearly longer medially than next the eye. Ocelli on the cephalic margin, in front of but a little apart from the eye. Vertex and pronotum rather strongly declivous, widest at humeri, surface transversely striate. Scutellum with fine transverse striae tendered to be finely rugose. Tegmina of moderate length, protruding abdominal apex, appendix well developed, with veins mostly evanescent. Wings with third apical cell very small and triangular. Spines at apex of hind femur 1–2–2. Female pygofer swollen in the ventral surface, shorter than the ovipositor-sheath, furnished coarsely with short setae on the distal half.

This genus may be easily recognized by the characteristic features of the head, tegmina, etc. which are entirely different from the known genera of the family.

- 72. Ikomella confersa sp. nov. [Figs. 85-90]
- Q. Length of body 3, id. till tegminal apices 3.3 mm. Body mostly pitchy black except eyes which are marginally stramineous and centrally brown, ocelli stramineous and antennae and central portion of frons which are tinted with stramineous. Tegmen semitransparent, stramineous except black claval apex, a black marking in two-fifths at base which is running along the claval vein to be contiguous with the black claval apex, a black marking along the anterolateral margin and some black markings between the basal and the anterolateral markings. Wing transparent, with veins blackish. Abdomen above and beneath mostly black, with tinge in the hind margins of the abdominal segments except distal two segments which are entirely black and scattered with brownish spines on the ventral surface. Legs mostly pale stramineous except in the hind legs, apex of tibia, distal half of the first tarsal segment and entire third tarsal segment which are blackish.

Locality collected: Chieng Mai, Thailahd (1 \bigcirc -holotype, Apr. 23, 1958, H. Ikoma leg.).

This is a peculiar species rather similar to Xestocephalidae at a glance but it may be easily identified by the characters related as the generic features. The generic name is dedicated to the collector of this curious species.

FAMILY 21, NIRVANIDAE

Genus Nirvana Kirkaldy, 1900

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86. en. Kirkaldy 1900 Entomologist. 33: 293.

73. Nirvana pallida Melichar, 1903

Melichar 1903 Hom. Faun. Ceylon, 166, t. 5: 3.

Locality collected: Chieng Mai, Thailand (19, Jan. 11, 1958; 200299, Feb. 3, 1958; 19, Feb. 7, 1958; 19, Feb. 25, 1958; 10, Apr. 4, 1958; 19, May 11, 1958; 19, June 4, 1958. All H. Ikoma leg.).

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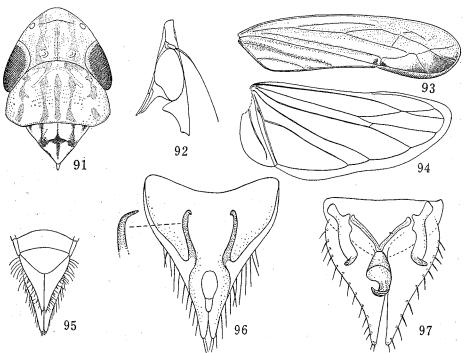
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Genus Mohunia Distant, 1908

DISTANT 1908 Faun. Brit. Ind. Rhynch. 4: 272.

74. Mohunia grandis sp. nov. [Figs. 91-97]

Length of body 34.6, 44.8, id. till tegminal apices 5.4, 5.5 mm. Body and tegmina mostly pale stramineous, with reddish stripes and fuscous patches on scutellum and on the hind area of tegmina. The reddish longitudinal stripes three (though not indistinct in 9) on vertex, five on pronotum [Fig. 91] and two on the claval veins of tegmina [Fig. 93] in number. The fuscous markings present followingly:— five longitudinal stripes on scutellum, of which outer pair is short and the central stripe is +-shaped, and some infuscated

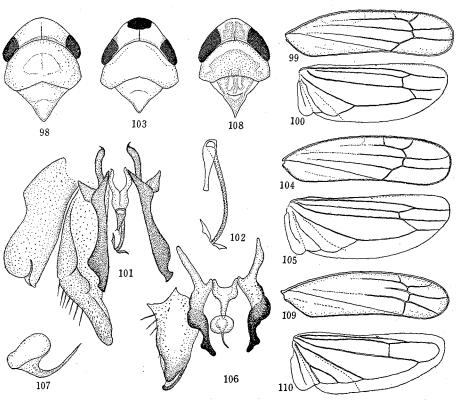


Figs. 91-97. Mohunia grandis sp. nov. §. 91. The head and thorax (dorsal v.). 92. The head and pronotum (lateral v.). 93. The tegmen. 94. The wing. 95. The genital segments (ventral v.). 96. The pygofer and the tenth segment (ventral v.). 97. The internal characters of the genitalia.

patches at the latero-posterior portion of tegmina, at apex of claval suture and at apex of outer claval vein. Tegmina subhyaline, with veins a little deeper stramineous and evanescent in the tegminal antero-lateral portion [Fig. 93]. Legs concolorous with body. Spines at apex of hind femora each 1-1-2.

Male pygofer tapering but developed well beyond the plate, overlapping tenth segment, with a conspicuous hook-shaped projection on each inferior margin. Connective V-shaped. Aedeagus short, with distal half thin and at apex recurved dorsad and tapering. Gonopore linear, on the ventral surface. Styles simple, protruding the base of connective, with apices which are blunt and turned latero-posteriorly.

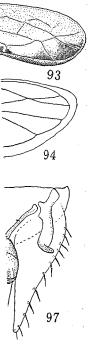
Locality collected: Chieng Mai, Thailand (13-holotype, Feb. 5, 1958, H.



Figs. 98-110. 98. Erythroneura subrufa (Motschulsky), 3. The head and thorax (dorsal v.). 99. do. The tegmen. 100. do. The wing. 101. do. The connective, aedeagus, styles, plate and a part of the pygofer (dorsal v.). 102. do. The aedeagus (dorsal v.). 103. Erythroneura maculifrons (Motschulsky), 3. The head and thorax (dorsal v.). 104. do. The tegmen. 105. do. The wing. 106. do. The connective, aedeagus, styles and the plate (dorsal v.). 107. do. The aedeagus (dorso-lateral v.). 108. Empoasca notata Melichar, \circ . The head and thorax (dorsal v.). 109. do. The tegmen. 110. do. The wing.

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\$25.5 mm. Body fuscous patches sh longitudinal pronotum [Fig. r. The fuscous ellum, of which ome infuscated



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Ikoma leg.; 19—allotopotype, same as the holotype).

This new species is larger than the genotype, *M. splendens* Distant, 1908, or *M. modesta* Distant, 1918, and differs from these known species in the reddish markings on tegmina and fuscous patches on scutellum.

FAMILY 22, CICADELLIDAE

Genus Empoasca Walsh, 1862

Walsh 1862 Prairie Farmer, 149.

75. Empoasca notata Melichar, 1903 [Figs. 108-110]

Melichar 1903 Hom. Faun. Ceylon, 214.

Locality collected: Chieng Mai, Thailand (Apr. 18, 1958, H. Ikoma leg.).

Genus Chlorita Fieber, 1866

FIEBER 1866 Verh. zool.-bot. Ges. Wien, 16: 508, pl. 7: 25.

76. Chlorita flavescens (Fabricius, 1803)

Fabricius 1803 Syst. Rhyng. 79 (Cicada).

Locality collected: Chieng Mai, Thailand (19, Feb. 4, 1958; 19, Feb. 8, 1958; 19, Apr. 10, 1958; 19, Apr. 11, 1958; 299, Apr. 15, 1958; 19, Apr. 23, 1958. All H. Ikoma leg.).

Genus Erythroneura Fitch, 1851

FITCH 1851 Hom. New York State Cab. Nat. Hist. 62.

77. Erythroneura subrufa (Motschulsky, 1863) [Figs. 98-102]

Motschulsky 1863 Bull. Soc. Nat. Moscou, 36 (3): 100 (Thamnotettix).

Locality collected: Chieng Mai, Thailand (19, Dec. 13, 1957, T. Ikoma leg.; 19, Jan. 26, 1958, H. Ikoma leg.; 299, Jan. 28, 1958, T. Umesao leg.; 13, Feb. 4, 1958, H. Ikoma leg.; 19, Feb. 15, 1958, H. Ikoma leg.; 13, Feb. 25, 1958, H. Ikoma leg.; 13, Apr. 12, 1958, H. Ikoma leg.; 19, May 6, 1958, H. Ikoma leg.).

The species having been recorded in Japan under the present name (Japanese name: Kiiro-himeyokobai) seems to be not this *E. subrufa* (Motschulsky) but *Typhlocyba sapporensis* Matsumura, 1932.

78. Erythroneura maculifrons (Motschulsky, 1863) [Figs. 103-107] Motschulsky 1863 Bull. Soc. Nat. Moscou, 36 (3): 103 (Typhlocyba).

Locality collected: Chieng Mai, Thailand (1含, Jan. 27, 1958, T. Umesao leg.; 1含, Feb. 3, 1958, H. Ikoma leg.; 1♀, March 7, 1958, H. Ikoma leg.; 1含 3♀♀, Apr. 4, 1958, H. Ikoma leg.; 1含, Apr. 10, 1958, H. Ikoma leg.; 1含, Apr. 18, 1959, H. Ikoma leg.; 2♀♀, Apr. 23, 1958, H. Ikoma leg.).

Although congeneric with the preceding species, the internal features of the male genitalia of the present species are different so severely as figured, that both species should be made belong to different genera in the future.

79. Erythroneura mori (Matsumura, 1909)

Matsumura 1909 Dainippon Gaichu Zensho, 1: 121 (Typhlocyba).

Locality collected: Chieng Mai, Thailand (1♀, Jan. 26, 1958; 1♂, Apr. 4, 1958. Both H. Ikoma leg.).

This species is known as a species injurious to the mulberry tree in Japan.

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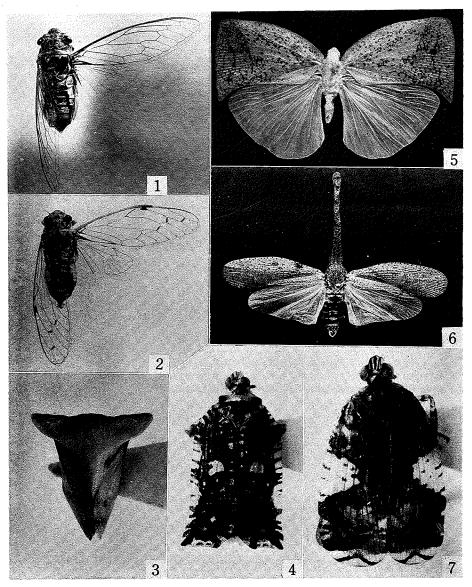
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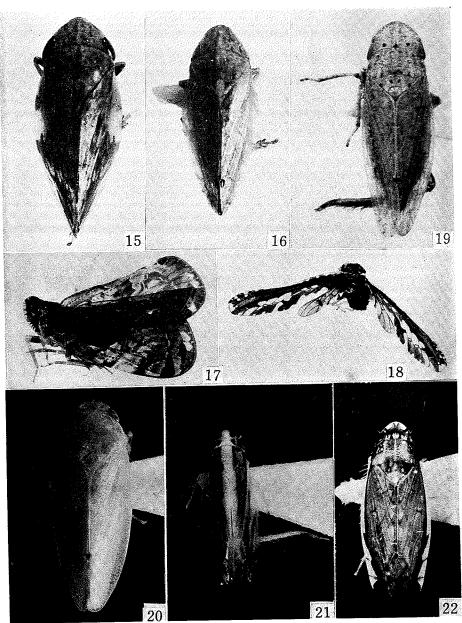


- 1. Dundubia bifasciata Liu, &. 2. Terpnosia andersoni (DISTANT), &.
- 3. Tricentrus umesaoi sp. nov. 9. 4. Elasmoscelis platypoda Kirby, 9.
- 5. Lawana conspersa (WALKER), φ. 6. Pyrops affinis (Westwood), φ.
- 7. Pitambara interrupta Distant, ♀.

8. Platylomia umbrata (DISTANT), S. 9. Cosmopsaltria oopaga DISTANT. S. 10. Tettigella sulphurata (DISTANT) 9. 11. Kolla mimica DISTANT,

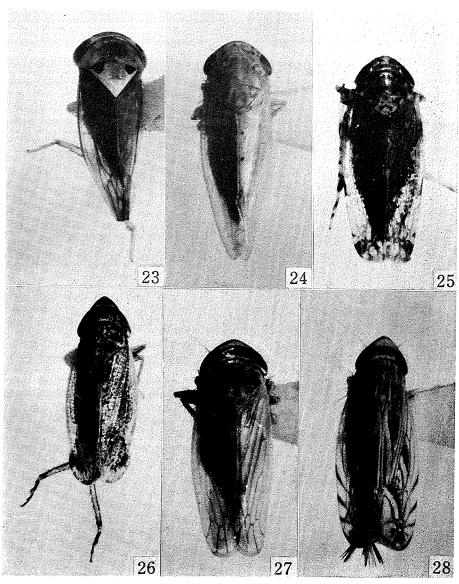
φ. 12. Handianus? sp. φ. 13. Aphrophora trifasciata DISTANT, δ.

14. Callitettix versicolor (FABRICIUS), 3.



15. Clovia conifer (WALKER), \circ . 16. Ptyelus pallidus MELICHAR, \circ . 17. Andes ikomai sp. nov. \circ . 18. Phenice moesta (WESTWOOD). \circ . 19. Hecalus orientalis sp. nov. \circ . 20. Krisna striata (KIRBY), \circ .

21. Yamatotettix flavovittata Matsumura, 9. 22. Platvretus marginatus Melichar, ♀.



23. Idiocerus clypealis Lethierry, §. 24. Bhatia olivacea (Melichar), §. 25. Deltocephalus (s. lat.)? sp. 9. 26. Umesaona (gen. nov.) asiatica sp. nov. §. 27. Mimodrylix capicola (Stål), 9. 28. Scaphoideus morosus Melichar, 9.